MATH 1120 Calculus II - Fall 2018 24 Oct 2018

Problem Set 22

1) What are sequences? What are some properties of sequences?

2) What does it mean for a sequence to converge? Diverge? Diverge to infinity? What are some ways to check that a sequence converges?

3) Which of the following sequences converge? diverge? If the sequence converges, find its limit.

(a) (10.1.36)

$$a_n = (-1)^n \left(1 - \frac{1}{n}\right)$$

(b) (10.1.42)

$$a_n = \frac{1}{(0.9)^n}$$

(c) (10.1.44)

$$a_n = n\pi \cos(n\pi)$$

(d) (10.1.52)

$$a_n = (0.03)^{1/n}$$

4) The previous sequences were defined explicitly, can you find a recursive definition for these sequences?